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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,086	10/14/2004	Tadashi Kitahara	046124-5329	6571

9629 7590 03/07/2006

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EXAMINER
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WILLIAMS, DON J

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



## Office Action Summary

**Application No.**

10/511,086

**Applicant(s)**

KITAHARA ET AL.

**Examiner**

Don Williams

**Art Unit**

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-5 is/are rejected.
- 7) ☒ Claim(s) 2,6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>05 November 2004</u> . | 6) <input type="checkbox"/> Other: ____.  |



## **DETAILED ACTION**

### ***Claim Objections***

Claim 1 objected to because of the following informalities: "a casing a having" appears to be a typographical error. It appears that it should be, "a casing having". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Williams (4,094,703).

As to claim 1, Williams discloses a solar energy converter that is functionally equivalent to a light detecting sensor as claimed. Williams solar energy converter includes an electric insulated support base or substrate (48), electrode elements 32-35 functioning as cathodes with cathode front surfaces (42) discharging photoelectrons through the incidence of light rays (44); the rearward surface (46) of the electrode elements (32-36) function as anodes collecting the photoelectrons discharged from the cathodes front surfaces (42) and a casing or enclosed vacuum (64, 66) having a space storing electric insulated support base or substrate (48), cathode front surfaces (42)



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along with anode rearward surfaces (46) of electrode elements (32-36) with the space being evacuated, cathode front surfaces (42) along with anode rearward surfaces (46) of electrode elements (32-36) are provided on the same surface of an insulated support base or substrate (48), (see figure 2, column 5, lines 35-67, column 7, lines 48-67).

As to claim 3, Williams discloses that the light detecting sensor has a plurality of anodes (46), (see figure 2, column 5, lines 40-44, column 7, lines 48-67).

As to claim 4, Williams discloses that the light detecting sensor having electrode elements 32-35 functioning as cathodes with cathode front surfaces (42) discharging photoelectrons through the incidence of ultraviolet light rays (44), (see column 3, lines 43-48, column 4, lines 50-57).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view Axmark et al (3,732,452).

As to claim 5, Williams discloses a solar energy converter that is functionally equivalent to a light detecting sensor as claimed. Williams discloses that the light detecting sensor having electrode elements (32-35) function as cathodes with cathode front surfaces (42) and the rearward surface (46) of the electrode elements (32-36)



function as anodes. Williams fails to disclose that the width of the cathode is larger than the width of the anode. Axmark et al disclose the widths of anodes (12a, 12b) are less than the width of cathode (10). It would have been obvious for one ordinary skill in the art to modify Williams to include cathodes with larger widths than the anodes as disclosed by Axmarx et al to improve the increase or magnitude of photoelectron emission resulting in a stronger electric field allowing the light detecting system to perform at an optimal level, (see figure 2, column 2, lines 36-65).

***Allowable Subject Matter***

Claims 2 and 6 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for indication of allowable subject matter: The prior art discloses all the limitations as set forth above, but lacks a clear teaching of the cathode having a comb tooth shape with a plurality of principle cathode parts radially extended and a diverging cathode part intersecting the principle cathode part, an anode having a comb tooth shape with a plurality of principle anode parts radially extended and a diverging anode part intersecting the principle anode part, and diverging cathode part and diverging anode part overlap and mutually engaged each other.




***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Don Williams whose telephone number is 571-272-8538. The examiner can normally be reached on 8:30a.m. to 5:30a.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Georgia Epps  
Supervisory Patent Examiner  
Technology Center 2800